

WHAT IS CLAIMED IS:

1           1.     A method for arbitrating use of a network medium to avoid collisions caused  
2 by multiple nodes attempting to transmit data on the network medium at the same time, said  
3 method comprising the steps of:

4                 sending a token packet from an active server to a first client node;

5                 sending an end of token session packet from said first client to said server;

6                 waiting for a prescribed time period to allow a second client node to send a  
7 lineup insertion packet to said active server.

1           2.     The method of Claim 1, wherein said active network server maintains a lineup  
2 card that lists one or more client nodes.

1           3.     The method of Claim 1, wherein said token packet specifies a maximum  
2 number of packets that said first client can send before sending said end of token session  
3 packet.

1           4.     The method of Claim 3, wherein said first client node is allowed to transmit  
2 data packets on said network medium only during a token session.

1           5.     The method of Claim 3, wherein said first client node is removed from said  
2 lineup card when said node has been inactive for a period of time.

1           6.     The method of Claim 3, wherein said lineup insertion packet requests insertion  
2 onto a high priority queue.

1           7.     The method of Claim 1, wherein a presence of a packet is detected by matching  
2 a specified preamble and length sequence.

1           8.     The method of Claim 1, wherein access to said medium is provided by a  
2 media access control layer.

1           9.     The method of Claim 8, wherein said media access control layer provides a  
2 burst mode.

1           10.    The method of Claim 1, wherein said medium provides multiple channels.

1           11.    The method of Claim 1, wherein said medium is a power line.

1           12.    The method of Claim 1, wherein said medium is a radio frequency  
2 transmission medium.

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1           13.    A networking architecture to provide isochronous and non-isochronous data  
2 transmission on a network medium, comprising:

3                   an active server node; and

4                   at least one client node, said active server node configured to provide a token  
5 to said at least one client node, said at least one client node configured to transmit on  
6 said medium for no more than a specified time period before sending an end of token  
7 session packet to said active server node.

1           14.    The network architecture of Claim 13, wherein said active server node  
2 maintains a lineup card of active client nodes, said lineup card comprising a high priority  
3 queue and a low priority queue.

1           15.    The network architecture of Claim 13, wherein said active server node polls all  
2 nodes listed on said high priority queue before polling a next node listed on said low priority  
3 queue.

1           16.    A method for transmitting data on a network medium, said network medium  
2 comprising a plurality channels, comprising:

3                   obtaining a plurality of data packets in a source node;

4                   transmitting said data packets, one data packet per channel, to a destination  
5 node;

6                   transmitting a multi-channel acknowledgement from said destination node to  
7 said source node, said multi-channel acknowledgement transmitted on all of said  
8 channels, said multi-channel acknowledgement providing acknowledgement  
9 information for each of said channels.

1           17.    A data network comprising:

2                   a multi-channel network medium;

3                   active server means for maintaining a list of active client nodes and arbitrating  
4 access to said medium, said active server means providing a token;

5                   client node means for receiving said token from said active server means.

1           18.    The data network of Claim 17, wherein said client node means comprises a  
2 multi-channel receiver.

1 19. The data network of Claim 17, wherein said client node means comprises a  
2 single-channel receiver.

1 20. The data network of Claim 17, further comprising burst mode means for  
2 sending unacknowledged data.

1 21. The data network of Claim 17, wherein said network medium comprises a  
2 power line.

1 22. The data network of Claim 17, wherein said network medium comprises a  
2 radio frequency link.

1 23. The data network of Claim 17, wherein each of said active server prioritizes a  
2 plurality of client node means.

1 24. A method for sending data on a multi-channel network medium comprising the  
2 steps of:

3 sending said plurality of fragments to a destination node;

4 receiving a response indicating which of plurality of said fragments were  
5 received and which of said plurality of said fragments that were lost; and

6 resending said fragments that were lost.

1 25. A network node coupled to a network, said node comprising:

2 a processor;

3 a memory operatively coupled to said processor; and

4 a protocol program loaded in said memory, said program configured to:

5 receive a token from a server node, said token specifying a maximum  
6 number of data packets;

7 hold said token;

8 transmit data packets on said network while holding said token; and

9 return said token to said server node after sending said specified  
10 maximum number of data packets.

1 26. The network node of Claim 25, wherein said network medium is a power line  
2 medium and said network node provides streaming data across said power line medium.

1 27. The network node of Claim 26, wherein said multimedia data comprises voice  
2 data.